



Mixing art and science to create custom knives

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Standing in his garage-turned-workshop, Boyd Ritter of the Laboratory's Weapon Systems Safety Analysis group clasps a bright-red steel bar called a billet. He takes it out of a blazing hot forge and places it onto an anvil that's secured to a tree stump by a rusted chain. With his other hand, he uses a hammer to strike at the steel to sculpt what will become a custom blade for culinary use.

"There's a ton of detail when it comes to forging knives," Ritter says. "It really appeals to me at an engineering level. I just love how the art intertwines with the science of it."

A career dedicated to the Weapons complex

After graduating from New Mexico State University with a degree in mechanical engineering, Ritter joined the Pantex nuclear weapons plant in Texas, where he worked for the next 15 years. After a short stint as a facility nuclear safety manager at Bechtel Corporation, he came to Los Alamos, where for the past four years he has worked as an R&D engineer.

"I've been part of the weapons complex for pretty much my entire career," Ritter explains. "It's interesting—while at Pantex, I worked on the other end of what we do at the Laboratory, so I had many opportunities to collaborate with the technical staff here."

Becoming a Forged in Fire champion

It was a chance meeting with one of his wife's uncles that led Ritter to begin to forge blades in his garage. "He described to me this television program called *Forged in Fire*," Ritter remembers. The History Channel show, now in its seventh season, features bladesmiths competing in a three-round elimination contest to recreate some of history's most iconic bladed weapons. The overall winner of each episode receives \$10,000.

Two knives made by Boyd Ritter.

After binge watching as many episodes as he could, Ritter wanted to give blade forging a try. Encouraged by his wife, Ritter began to acquire the basic tools and to experiment. Using his engineering background, he began to sculpt blades for friends and family. He quickly gained prowess and decided to try out for a *Forged in Fire* competition.

To his surprise, Ritter found himself competing on the show's December 18, 2019, episode, titled, "A Very Forged Christmas." He beat out the other finalist by crafting a British light-cavalry sword to become a *Forged in Fire* champion.

"The competition is very real," Ritter says with a laugh. "I mean, it feels like 1,000 degrees in there. There's a cameraman assigned to you, and he follows you wherever you go. The hardest part about the competition is succumbing to tunnel vision—next thing you know, time's up!"

Although the judges are intense onscreen, Ritter notes that offscreen they are really helpful. "The judges did a great job of putting us at ease before the filming got started," he notes. "What was most surreal was when the host, Wil Willis, announced that I was the champion."

The mission remains his calling

Although he continues to make knives and even swords for family and friends, Ritter remains dedicated to his stockpile stewardship mission at the Laboratory. "Making knives and other cutting tools will remain a hobby of mine for a while yet," he says with a smile. "I have an awesome job where what I do matters to the security of the nation, so for now I'm more than content just to keep my forging a hobby."

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